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Hay Lake Specialist's Report

Anderson Mesa Landscape Scale Assessment

**Mormon Lake, Mogollon Rim Ranger Districts,
Coconino National Forest
Coconino County, Arizona**

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INTRODUCTION

The Anderson Mesa Landscape Scale Assessment is a comprehensive document that describes the ecosystem's structure, processes and functions. The Assessment objectives as outlined in the project initiation letter were as follows:

- Identify opportunities (projects) that will help move Anderson Mesa from its existing condition to a desired future condition. These conditions will include various aspects of ecosystem health as well as public values and uses.
- Identify amendments to the Coconino Forest Land Management Plan that may be appropriate. This will be accomplished through a thorough review and validation of the existing Coconino Land Management Plan Management Areas. This review may identify the need for some additional resource or human dimension information and will identify the need for changes in the Forest Land Management Plan. This review may identify spin-off tasks and projects – such as a Roads Analysis Plan.
- Develop a recreation management strategy with partner agencies (National Resource Conservation Service, Arizona Game and Fish) for the Hay Lake Complex.

This document is not a decision document (EA, EIS, etc.) with proposed projects, but rather a compilation of data that identifies those ecosystem functions that are working and those that need restoration.

The Anderson Mesa area lies between the extensive pine country of the rim and the high desert of the little Colorado River-Basin. It is an area of limited rainfall making grass and forb productivity variable from year to year. The entire mesa is geographically defined by 4 watershed boundaries; however, there are common, repeated vegetative types throughout. It is large in scale, covering approximately 270,000 acres.

The bulk of this report will describe the existing conditions, desired future conditions, and possible management strategies. The area of interest in this report includes the lakes complex that occurs around the Hay Lake area. The lake/wetland areas include Hay Lake, Long Lake, Soldier Lake, Soldier Lake Annex and Tremaine Lake. This area will be referred to in this report as the Hay Lake Complex.

HAY LAKE EXISTING CONDITIONS

The Existing Condition for the Hay Lake Complex was a collaborative effort between the Coconino National Forest, Other agencies, Northern Arizona University, the Citizens Working Group and input from a public meeting in April, 2003. Please refer to Appendix 1, Need For Change Matrix which summarizes Existing Conditions for the Hay Lake Complex.

The Hay Lake complex is a unique area where 5 different Lakes are situated in close proximity to each other—Hay Lake (currently under a 30-year wetland easement with the National Resource Conservation Service), Long Lake, Tremaine Lake, Soldier Lake, and Soldier Lake

Annex. Long Lake currently is stocked with fish by the Arizona game and Fish Department. There are approximately 6,000 acres of newly acquired lands that were in private holdings and now are under ownership of the US Forest Service. There is currently no specific management direction for the newly acquired Hay Lake property within the Coconino National Forest Land Management Plan.

National Resource Conservation Service Easement

The National Resource Conservation Service (NRCS) has just completed a restoration of the Hay Lake lakebed within the 30 year wetland easement. The Hay Lake wetland easement is currently accessed by a number of 2-track roads that are used by NRCS and the private land-owner to do maintenance work on the ditches and monitoring of water measuring devices. There is currently no road management in the Hay Lake Complex. There are no specific areas that are designated for wildlife viewing at Hay Lake, nor is there any interpretation of the wetland. Currently, the various water delivery systems (ditches) are being maintained at satisfactory levels of operation.

Road Management

A Roads Analysis Plan has been completed that includes recommendations for roads management on Anderson Mesa, including the Hay Lake Complex. The existing roads can be generally described as in fair to poor condition. Most are user created by ranchers, wood gathers, hunters or those who drive for recreation, including off highway vehicles (OHVs). The greater availability of 4 wheel drive vehicles has resulted in a larger increase of user created roads in the last few years. This trend is expected to increase.

The policy concerning off-road travel has been open unless posted closed. This has allowed users to be able to drive cross-country and has helped contribute to the number and location of roads in the Anderson Mesa area. Due to soil and vegetation disturbance caused by repeated tire tracking in combination with dry conditions on the mesa, it takes a long time for grasses and forbs to cover the tracks created by off-road use and so they remain visible for some time, encouraging others to follow. User created roads, or non-system roads, lack proper drainage and during wet conditions, water is retained in the tracks, the roads often become impassible. Drivers then move over to an adjacent dry area, and then multiple tracks or a "braiding" effect is created. A high percentage of the roads within the analysis area are user created. Most user created roads do not comply with resource management direction, or consider resource protection in their location. Due to the high number of miles on the forest needing work, most of the maintenance level 3 roads within the landscape area have received minimal maintenance and resurfacing over the last 10 years

Water Management

The damming of Tremaine Lake, in the 1920's and subsequent construction of water delivery structures (ditches and dikes) has altered water movement in and adjacent to the Hay Lake complex. This manipulation of water has had a direct affect on the soil features we observe today in Hay Lake. Along with the land-leveling for irrigation, soil features have been altered and do not appear as they did before the dam construction.

Water is an important commodity in the arid southwest. The distribution and management of the waters within the Hay Lake Complex is no exception. As water moves across the landscape and through man-made channels into and through the complex of seasonal wetlands and reservoirs in the Hay Lake area, an accountability of water use needed to be determined. These waters are used by wildlife, recreational uses and by the local Bar T Bar Ranch known locally as the Sod Farm, owned and operated by Bob and Judy Prosser. A Modification Agreement among the Bar T Bar Ranch Company Limited Partnership, L.L.L.P., dated November 10, 1999, describes the legal water rights. The water sharing agreement describes both water storage rights and water use rights for Tremaine Lake and Soldier and Soldier Annex Lakes. The 'First Right' is 1,000 acre-feet goes to the Bar T Bar Ranch, the 'Second Right' is 3,300 acre-feet goes through the Forest Service lands to the NRCS Wetland Restoration Plan easement.

The Natural Resources Conservation Service purchased a conservation easement from Bar T Bar, Ltd. Partnership in Coconino County, Arizona, in January 2000 to restore approximately 760 acres of irrigated pasture back to an ephemeral wetland ecosystem. The easement includes another 757 acres of upland that will serve as a buffer to the wetland. The easement was purchased through NRCS's Wetland Reserve Program for the primary purpose of restoring wetland functions and values for the benefit of migratory birds and other wetland dependant species. The 1,517 acres was part of a larger private land in-holding within the Coconino National Forest southeast of Flagstaff and was subsequently purchased by the U.S. Forest Service. Currently, the water rights have not been legally finalized for the Hay Lake purchase.

The water delivery system includes man-made irrigation ditches, natural channels and a series of outlet structures that divert water. The outlet works of Tremaine Dam direct water into any of three ditches (east, west, and Main). The East ditch carries flows along the east edge of the wetland easement and joins the main channel south of the wetland easement; these flows continue to the Bar T Bar Ranch. The West ditch delivers flow into existing irrigation ditches within the Hay Lake basin; these basin ditches direct flows to optimize irrigation distribution uniformity. The ditch system actually brings water in from not only the Jacks Canyon 5th code watershed (where all but Soldier Lake reside), but also from the Canyon Diablo canyon 5th code.

The main channel meanders from Tremaine Lake outlet, south towards the east edge of Hay Lake basin. Historically, the Main channel traveled into the central part of the Hay Lake basin. Sometime in the early 1900's the channel was realigned and lowered to flow straight to the basin outlet and a plug was placed in the historic channel. This effectively served to lower the water table and drain the basin for establishment and irrigation of pasture grass. Draining the basin through channeling, ditching and land leveling reduced the hydrology of Hay Lake. Attempts to farm the basin nearly eliminated the former wetland plant community.

Recreation

Crayfish populations are high in the Hay Lake Complex and as a result is reducing emergent and submergent vegetation populations and negatively affecting water quality.

Recreational activities are impacting wildlife in key areas during critical time periods (breeding, fawning, and bird nesting) at Hay Lake and Tremaine Lake. Woody riparian species are lacking.

Long Lake provides fishery opportunities for recreation. The area receives much fishing and camping use throughout the year negatively impacting surrounding habitat. Because of the heavy use developed recreation sites are in poor condition, are in need of new facilities, signing, interpretation, and other features. Access roads are plentiful and many are redundant, braided and poorly located causing resource damage. There is no vegetation management plan(s) for the Hay Lake Complex that would provide guidance for long-term maintenance of developed sites.

There are many dispersed sites near and along side of Long Lake and are not specifically designated as dispersed campsites. Many of these sites are poorly located and are damaging the resource. These high use areas, have not been officially designated dispersed campsites and are not being managed for resource protection and user satisfaction. No interpretative facilities and materials exist to protect user experience and resource conditions.

Tremaine Lake Access

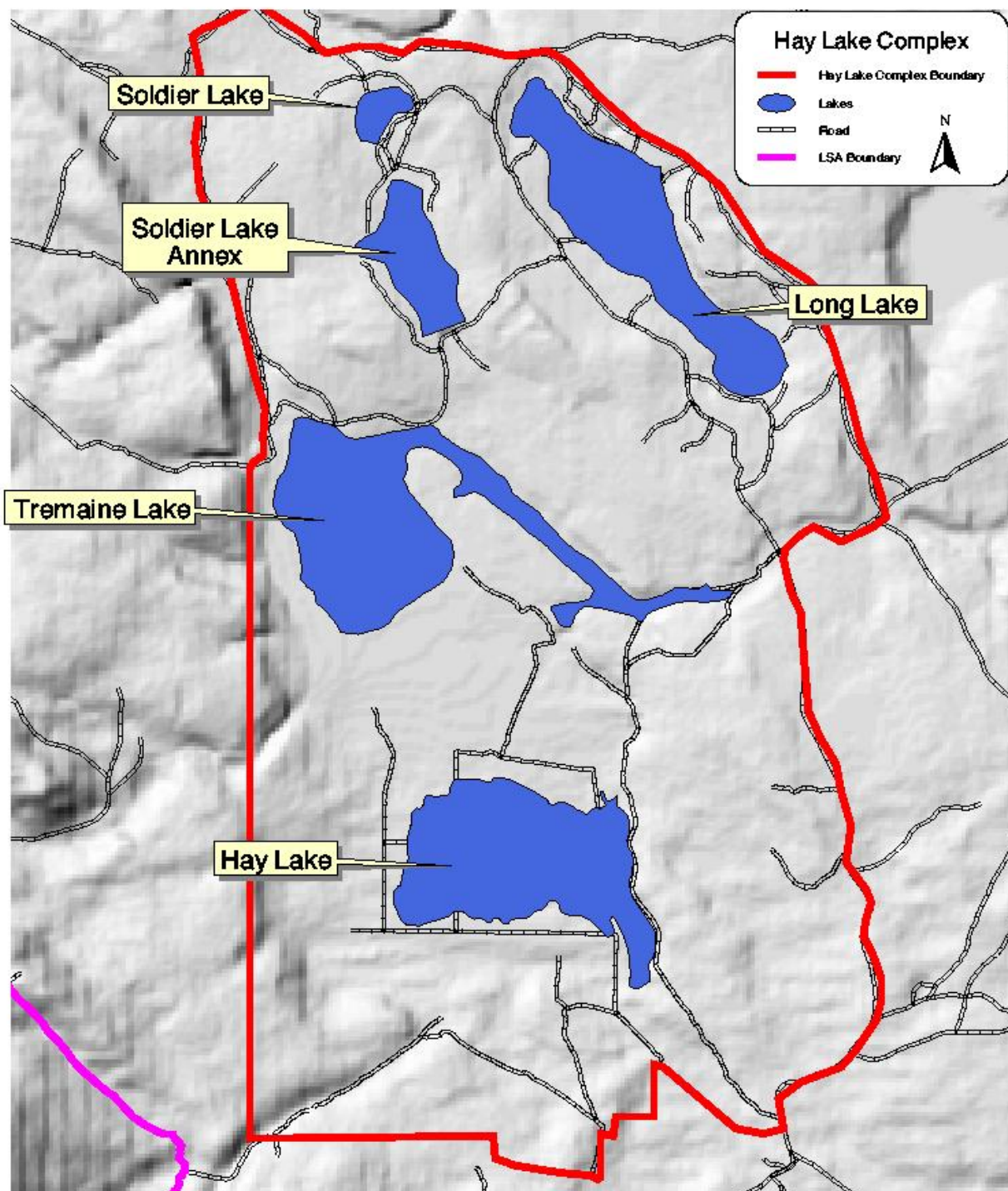
Access is by foot travel to Tremaine Lake for those wanting to fish and recreate on the lake. Tremaine Lake provides nesting habitat for waterfowl. There is one known bald eagle winter roost west of Tremaine Lake. Water quality at Tremaine Lake has not been determined—mercury may be an issue.

Wildlife

Crayfish are present in the Hay Lake Complex. Their presence is reducing emergent and submergent vegetation populations and negatively affecting water quality.

There are no specific areas that are designated for wildlife viewing at Hay Lake nor a trail system to access an area for viewing.

Figure 3: Hay Lake Complex



HAY LAKE DESIRED FUTURE CONDITIONS

The Desired Future Condition for the Hay Lake Complex was a collaborative effort between the Coconino National Forest, Other agencies, Northern Arizona University, the Citizens Working Group and input from a public meeting in April, 2003. Please refer to Appendix 1, Need For Change Matrix which summarized Desired Future Conditions for the Hay Lake Complex.

Public Meeting Input

Information gathered at the public meetings in April 2003 relative to what the public wanted the Mesa to look like or be managed for, is incorporated into this section.

The uniqueness of the Hay Lake Complex area, and the opportunity to give the area a hard-look relative to future management direction emphasis is timely. There were 7 categories that captured their values and desires, they were:

- 1. Natural and Wilderness Values**
- 2. Preservation of Undeveloped Open Space**
- 3. Historic Uses**
- 4. Preservation of Historic and Prehistoric Values**
- 5. Wildlife Values**
- 6. Restoration and Maintenance of Healthy Grasslands, Habitat**
- 7. Sustainability of the Resources in Balance with Local Economics and Multiple Use Concept**

Most of these values and desires can be incorporated into the future management emphasis of Hay Lake to some degree. It must be understood that not all values and management desires can be realized on every acre on the Mesa. Some areas are unique and lend themselves to specific uses, or management. The same rationale can be applied to the Hay Lake Complex.

By virtue of the fact that the NRCS has a 30-year easement on 760 acres to restore pasture back to an ephemeral wetland ecosystem gives some validation to the idea that managing for wildlife and wetlands is a good direction to proceed towards. This would also satisfy the publics desire for an increase in watchable wildlife and an improvement in wetland function. The easement includes another 757 acres of upland that will serve as a buffer to the wetland. The primary purpose is to restore wetland function and values for the benefit of migratory birds and other wetland dependant species.

Citizen Working Group Input

National Resource Conservation Service Easement

The NRCS continues to develop and restore the Hay Lake wetlands under the 30-year easement that covers approximately 1,517 acres. The Hay Lake wetlands provide important waters for migratory birds and other local wildlife. The area also is providing quality wildlife viewing for those who enjoy watching wildlife in their natural surroundings and interpretive information of the wetland to forest visitors. The Hay Lake wetland easement is currently accessed by a minimum road network sufficient to allow NRCS and private land owners to do maintenance work on the ditches and monitor water measuring devices.

Road Management

A Roads Analysis Plan (RAP) has been completed. The RAP includes recommendations for closure, obliteration, realignment and status quo. Through projects within the Hay Lake Complex, the road network is becoming more manageable, resource damage is healing and new damage decreasing in frequency.

Water Management

The various water storage and delivery systems within Hay Lake Complex are being maintained and are at satisfactory operational levels. Maintenance and management of the water delivery system is accomplished in such a way as to strategically conserve water where there is the most flexibility for future distribution. A water management plan has been completed in cooperation with the NRCS and the Hay Lake Water Group.

Because of the good working relationship between NRCS, US Forest Service and Bob Prosser, the system continues to supply needed water to the lake complex, Bob Prosser's private property and sufficient water to the Hay Lake wetland, restoring that wetland.

Tremaine Lake Access

A minimum road network for lake access is designated. Road use is limited (closed to Soldier Annex Dam/Upper Tremaine). Road access to Soldier is improved. There is a road to a small parking area (3-5 vehicles) and trailhead for a trail to a wildlife viewing site in the Hay Lake/Tremaine Lake area. Three places are recommended for bird watching in the Hay Lake Complex: 1) east side of Hay Lake, 2) Tremaine Lake, and 3) Tremaine Lake Narrows. There are developed hiking and interpretive trails for fishing/birding at Tremaine Lake and for bird viewing at Hay Lake.

Recreation

Tremaine Lake is being managed for non-motorized boating and fishing and is in harmony with nesting and migratory waterfowl, bald eagle and other watchable wildlife.

Crayfish populations have decreased dramatically in all lakes, with the result an improvement in aquatic habitat.

Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting) at Hay Lake and Tremaine Lake. Woody riparian species has at least two age classes and occurs where potential allows at reservoir wetlands.

Long Lake provides fishery opportunities for recreation and habitat is improved to meet this opportunity. All developed recreation sites are maintained in good condition, with up to date facilities, signing, interpretation, and other features, and meeting all related health and safety guidelines and requirements with implementation schedule for completion outlined in the Forest Recreation Capital Investment Program. Access roads and trails have been assessed to meet multiple needs, and sanitation and other facilities have been upgraded to meet demand and health

and safety requirements. A vegetation management plan(s) has been prepared for the Hay Lake Complex at developed sites that provides guidance for long-term maintenance of developed sites.

Dispersed sites near Long Lake are designated dispersed campsites and have been identified and delineated, and are managed for resource protection and user satisfaction. In highest use areas, designated dispersed campsites have been identified and delineated, and are managed for resource protection and user satisfaction. Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition.

Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition.

HAY LAKE POSSIBLE MANAGEMENT ACTIONS

The following are possible management actions for the Hay Lake Complex that was developed collaboratively between the Coconino National Forest, Other agencies, Northern Arizona University, and the Citizens Working Group. Please refer to Appendix 1 that summaries possible management actions.

Road Use Designation to Manage the Wetland Easement:

Designate unclassified roads 123, 126, and 132 as system roads for access to headgate structures and maintenance.

Road Management Possible Management Actions:

- Designate the road system as follows:
Open Road-- Level 3

Designate FR 82 from southern boundary to junction FR 653 as a level 3 road.

Open Road-- Level 2

Designate the following roads as level 2 roads: 9729C, 69B, 653, 9719Y, 9722C, 9724D (from beginning to 9719B junction and from junction 9727D to junction 9716B), 9719B, 82M, 82L 653A (FR82 to FR 135 junction), 82K, 9716T, 9716Q, 9716R, 9727D, FR 135 (FR653A junction to upper end of Tremaine lake), unclassified roads 123, 126, and 132 as system roads for access to headgate structures and maintenance of wetland easement. FR653 may be level 3 to improve access to Soldier Lake and Soldier Lake Annex. At a minimum, it needs spot fill to create one single road bed rather than braided system as is now. FR 653A also needs improved

to provide access to south end of Soldier Lake annex and to north end of Tremaine Lake.

Relocate/reconstruct Unclassified Road 132 as level 2/3 for access to birding area.

Decommission the following roads:

9719N, redundant segments of 9719Y, 653 (from east termini w/ 82 road to 653B junction), 9716P, 9725D, 9719F, 9719C, 9724D (from junction 9719B to junction 9727D and from junction 69B to junction 9716B), 135 (from west boundary to top of Tremaine Lake), 9719J, 9719H, unclassified road 214, unclassified road 215, unclassified road 134, unclassified road 127, unclassified road 136, unclassified road 129, unclassified road 116, and unclassified road 119.

Water Delivery System Possible Management Actions:

- Inspect water delivery structures annually.
- Create a Water Management Plan for the Hay Lake Complex needs to be developed and written in cooperation with NRCS and the Hay Lake Water Group.
- Do not manage Tremaine Lake as a fishery, rather, manage Soldier Lake and Soldier Lake Annex as fishery.

Tremaine Lake Possible Management Actions:

- Do not manage Tremaine Lake as a fishery; rather, manage Soldier Lake and Soldier Lake Annex as fishery.
- Create access (road and boat ramp) from unclassified road 132.
- Create seasonal use restriction to protect road beds.
- Create foot access only through trail system on south side of Tremaine Lake via Unclassified Road 132 and on north side of lake via FR 653A and FR 135. Create parking areas for 3-5 vehicles at road terminus for north and south access routes at Tremaine Lake.
- Interpretation of watchable wildlife at trailheads at Tremaine Lake.
- Enhance vegetation production at wetlands for bird hiding/screening cover through plantings and crayfish control/eradication at Tremaine Lake.
- In cooperation with partners, assess the need for habitat structures in Tremaine Lake.

Hay Lake Possible Management Actions:

- Create bird viewing site at East-side of Hay Lake with access from FR 82 via unclassified road 132. Need to re-locate and reconstruct unclassified road 132 for approximately 1.2 miles.
- Create 5 car parking area at birding site at Hay Lake (terminus of unclassified road 132).
- Construct approximately ½ to 1 mile trail from parking area at Hay Lake to lake bed.
- Interpretation of watchable wildlife at trailhead at Hay Lake.

Crayfish Control Possible Management Actions:

- Control crayfish populations with the following means:
 1. Stock with small mouth bass to feed on crayfish.
 2. Chemical treatment and monitor chemical treatment options.
 3. Crayfish sterilization.
- Monitoring of aquatic vegetation in Hay Lake.

Hay Lake Complex Overall Possible Management Strategies

- Utilize CWG to create management direction.
- Utilize adjacent management direction from the current Forest Plan for like habitat types.
- Manage Hay Lake in a lakes complex including Tremaine Lake, Soldier Annex Lake, Soldier Lake, Long Lake, and Hay Lake. Management emphasis is for recreation, watershed condition and wildlife in concert with other uses.

Long Lake Developed Recreation Possible Management Actions:

- Use woody vegetation from adjacent vegetative treatments for fish structures.
- Plant submerged aquatic vegetation for fish habitat structures.
- Consider Long Lake as a renovation site by clearing out silt and crayfish to create blue ribbon fishery.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.

- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Volunteers for education.
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

FOREST PLAN CONSISTENCY AND ADEQUACY FOR THE HAY LAKE COMPLEX

[illegible]

Potential Management Strategies	Forest Plan Consistency Statement
w/ 82 road to 653B jct), 9716P, 9725D, 9719F, 9719C, 9724D (from jct 9719B to jct 9727D and from jct 69B to jct 9716B), 135 (from west boundary to top of Tremaine Lake), 9719J, 9719H, unc214, unc215, unc 134, unc127, unc136, unc129, unc116, and unc 119.	
Inspect structures annually Create a Water Management Plan for the Hay Lake Complex needs to be developed and written.	P90, amend 6 for dams on three years... is basic fa0 maintenance needed in Plan, Part of an annual maintenance and monitoring agreement. Should be part of a larger Water Management Plan for the Hay Lake Complex. Doesn't need a FP Amendment, however, could be included in a Hay Lake Complex Management Plan which may include recommendations for a Forest Plan Amendment.
Do not manage Tremaine Lake as a fishery, rather, manage Soldier Lake and Soldier Lake Annex as fisheries as warm water fishery. Create access (road and boat ramp) from unclassified road 132. Create seasonal use restriction to protect road beds Create foot access only through trail system on south side of lake via Unclassified Road 132 and on north side of lake via FR 653A and FR 135. Create parking areas for 3-5 vehicles at road terminus for north and south access routes. Interpretation of watchable wildlife at trailheads. Enhance vegetation production at wetlands for bird hiding/screening cover through plantings and crayfish	FP – pg 64 Wildlife and Fish Operations and Maintenance FP – pg 65-12 Wildlife and Fish Coop, With State, Federal Agencies, and Other Groups Warm water fisheries discussion is silent in plan., RAP recommendations. Hay Lake Complex Management Plan, FP Amendment. FP – Road Maintenance and Management, pg 88 Not in FP. Should be included in a comprehensive Hay Lake Complex Management Plan. FP – Management Direction for Outdoor Recreation, pg 22 FP – pg 174, talks mainly to nesting cover and forage

Potential Management Strategies	Forest Plan Consistency Statement
control/eradication, ...	<i>There’s S/G for ‘Cooperating with AGFD to develop implementation schedules for AZ Cold Water Fisheries Strategic Plan. Do we need on for ‘warm’ water fisheries??</i>
Stock with small mouth bass to feed on crayfish.	FP – MA 12 Riparian and Open Water, Nonstructural Wildlife Habitat Improvements, pg 174, Cooperate with AGFD on fish population control of aquatic plants and fish stocking to meet State fisheries mgnt goals. FP – pg 64 Wildlife and Fish Operations and Maintenance FP – pg 65 Wildlife and Fish Coop, With State, Federal Agencies, and Other Groups
Chemical treatment	P65-12, p174
Monitor chemical treatment options	Not in FP
Crayfish sterilization	P65-12, p174
Monitoring of aquatic vegetation in Hay Lake	Not in FP S/G’s, Not much in Monitoring Section relative to monitoring aquatic vegetation.. FP – S/G’s do speak to: Maintaining at least 80 % of the potential emergent veg cover from May 1 – July 15 in key wetlands. Pg 174 FP – pg 174 talks to nonstructural Wildlife Habitat Improvements.
Hay Lake Complex Management Plan to encompass the following:	
Create bird viewing site at East-side of Treamaine Lake with access from FR 82 via unclassified road 132. Need to re-locate and reconstruct unclassified road 132 for approximately 1.2 miles.	FP – Management Direction for Outdoor Recreation, pg 22 No S/G’s Hay Lake Complex Management Plan
Create 5 car parking area at birding site (terminus of unclassified road 132).	FP – Management Direction for Outdoor Recreation, pg 22 No S/G’s Hay Lake Complex Management Plan

Potential Management Strategies	Forest Plan Consistency Statement
<p>Specify unclassified road 132 as a system road, level 3.</p> <p>Construct approximately ½ to 1 mile trail from parking area to lake bed.</p> <p>Interpretation of watchable wildlife at trailhead.</p>	<p>Not in FP Roads Analysis Plan will identify these roads, risks and benefits and recommend change.</p> <p>FP – Management Direction for Outdoor Recreation, pg 22 No S/G’s Hay Lake Complex Management Plan</p> <p>FP – Management Direction for Outdoor Recreation, pg 22 No S/G’s</p>
<p>Utilize CWG to recommend management direction.</p> <p>Utilize adjacent management direction from the current Forest Plan for like habitat types.</p> <p>Manage Hay Lake in a lakes complex including Tremaine Lake, Soldier Annex Lake, Soldier Lake, Long Lake, and Hay Lake. Management emphasis is for recreation, watershed condition and wildlife in concert with other uses.</p>	<p>Not in FP, not needed for collaborative input. Possible tie with p56.</p> <p>FP – Pinyon-Juniper Woodlands, Less Than 40% Slopes, pgs 148 – 155 FP - Pinyon-Juniper Woodlands, Greater Than 40% Slopes, pgs 155 – 157 FP - Grassland and Sparse Pinyon-Juniper Above the Rim, pgs 162 – 165 FP – Unproductive Timber Land, pgs 145 – 147 FP – Riparian and Open Water p171-177</p> <p>Not in Forest Plan, could be management emphasis. Hay Lake Complex Management Plan would likely recommend FP Amendment.</p>

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
NEED FOR CHANGE							
<p>Element = What part of the Focus Area (e.g.: Transportation) do you want to focus on? Road Density, braided roads, access to recreational areas?</p> <p>Measure = What measure will you use to show progress toward DC? E.g.: Miles of road per square mile</p> <p>Existing Value = What is the existing value for the measure? E.g.: 25 miles of road per square mile</p> <p>Desired Value = What is the desired value for the measure? E.g.: 2 miles of road per square mile</p> <p>Need For Change = What is the gap between desired and existing values? State the need for resolving that difference. E.g.: 20 miles of road per square mile.</p>							
The following applies to all assemblages.	<ol style="list-style-type: none">1) Reference to species diversity and composition will infer native plants and those native plants that closely approximate site capability as expressed in the PPC (Potential Plant Community).2) The PPC is the plant community of the most advanced type (usually in late seral stage) capable of development under and in dynamic equilibrium with the prevailing environment. It usually represents the latest seral stage capable of supporting healthy vegetative composition, diversity and productivity under conditions of little to no human caused disturbance and under sustained years of normal precipitation (near or above average rainfall). This information can serve as sideboards in establishing the capability of the soil and vegetation for the identification of desired condition.3) There is an understanding that the presence and abundance of certain species is closely aligned with and dependent upon climatic regime influences and the range of natural variability. During cycles of wet weather, there will be species present that are not ordinarily present during dry cycles. EC/DC must be evaluated within this context.4) Possible Management Strategies may be implemented on either a short term or long term basis with the objective of showing improvement towards the Desired Condition.5) Forest Service will be working with adjacent land managers and agencies to implement and monitor projects.6) Implementation of all management strategies is dependent upon annual Forest Service funding. There is a possibility for some future projects to be funded through grants and/or agreements or with matching funds.						
Focus Area – Hay Lake Complex							
Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need For Change	Potential Management Strategies

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
Hay Lake wetland easement is accessed by a number of 2-track roads that are used by NRCS and the private land-owner to do wetlands, maintenance work on the ditches and monitoring of water measuring devices.	A minimum road network for lake access is designated.	Administrative Use road access	Designated road network for administrative use	None	Established road network for administrative use	A minimum road network for wetland easement access is designated.	Designate unclassified roads 123, 126, and 132 as system roads for access to headgate structures and maintenance.
<p>There is currently no road management in the Hay Lake Complex.</p> <p>There are no specific areas that are designated for wildlife viewing at Hay Lake</p>	<p>Road use is limited (closed to Soldier annex dam/Upper Tremaine). Road access to Soldier is improved.</p> <p>There is a road to a small parking area (3-5 vehicles) and trailhead for a trail to a wildlife viewing site in the Hay Lake/Tremaine Lake area</p> <p>There are developed hiking and interpretive trails for fishing at Tremaine Lake, bird viewing at Hay Lake.</p>	Road Access	Designated road network for public use	None	Established road network for public use.	There is a need to evaluate and establish a road network for public assess.	<p>Open Road Level 3</p> <p>FR 82 from southern boundary to junction FR 653.</p> <p>Open Road level 2</p> <p>9729C, 69B, 653, 9719Y, 9722C, 9724D (from beginning to 9719B jct and from jct 9727D to jct 9716B), 9719B, 82M, 82L 653A (FR82 to FR 135 jct), 82K, 9716T, 9716Q, 9716R, 9727D, FR 135 (FR653A jct to upper end of Tremaine lake), unclassified roads 123, 126, and 132 as system roads for access to headgate structures and maintenance of wetland easement. FR653 may be level</p>

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
							<p>3 to improve access to Soldier Lake and Soldier Lake Annex. At a minimum, it needs spot fill to create one single road bed rather than braided system as is now. FR 653A also needs improved to provide access to south end of Soldier Lake annex and to north end of Tremaine Lake.</p> <p>Relocate/reconstruct Unclassified Road 132 as level 2/3 for access to birding area.</p> <p>Decommission the following roads:</p> <p>9719N, redundant segments of 9719Y, 653 (from east termini w/ 82 road to 653B jct), 9716P, 9725D, 9719F, 9719C, 9724D (from jct 9719B to jct 9727D and from jct 69B to jct 9716B), 135 (from west boundary to top of Tremaine Lake), 9719J, 9719H, unc214, unc215, unc 134, unc127, unc136, unc129, unc116, and unc 119.</p>

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
The various water delivery systems are being maintained at satisfactory levels of operation.	The various water storage and delivery systems within Hay Lake Complex are being maintained and are at satisfactory operational levels. Maintain water delivery system of ditch system and managed in a way to strategically conserve water where there is the most flexibility in future distribution. A water management plan is completed in cooperation with the NRCS and the Hay Lake Water Group	Water delivery system	Adequate water delivery	Some maintenance needs at Tremaine dam and Tremaine headgate	Water delivery is occurring and maintenance on system is adequate	There is a need to assure that water delivery infrastructure is functional.	Inspect structures annually Create a Water Management Plan for the Hay Lake Complex needs to be developed and written.
Access is by foot travel to Tremaine Lake for those wanting to fish and recreate on the lake. Tremaine Lake provides nesting habitat for waterfowl. There is one known bald eagle winter roost west of Tremaine Lake. Water quality has not been determined—mercury may be an issue.	Tremaine Lake is managed for non-motorized boating and fishing and is in harmony with nesting and migratory waterfowl, bald eagle and other watchable wildlife.	Access, Wildlife disturbance	Access	Currently access is non existent, disturbance is minimal due to lack of access	Seasonal access is provided that minimizes impacts to nesting waterfowl	There is a need to improve access for sport fishing opportunities while minimizing disturbance to wildlife species during nesting and roosting seasons	Do not manage Tremaine Lake as a fishery; rather, manage Soldier Lake and Soldier Lake Annex as fishery. Create access (road and boat ramp) from unclassified road 132. Create seasonal use restriction to protect road beds Instate seasonal closures to protect breeding wildlife

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
							<p>species.</p> <p>Create foot access only through trail system on south side of lake via Unclassified Road 132 and on north side of lake via FR 653A and FR 135. Create parking areas for 3-5 vehicles at road terminus, but well away from pronghorn movement corridor to avoid disturbance to pronghorn, for north and south access routes.</p> <p>Interpretation of watchable wildlife at trailheads.</p> <p>Enhance vegetation production at wetlands for bird hiding/screening cover through plantings and crayfish control/eradication, ...</p>
Crayfish are present in the Hay Lake Complex that are reducing emergent and submergent vegetation populations and negatively affecting water quality.	Reduced crayfish habitat resulting in improved aquatic habitat.	Crayfish populations	The presence of crayfish in lake	Estimated population of crayfish in lake.	Zero or reduced population present.	There is a need to drastically reduce or eliminate the crayfish populations in the lakes.	<p>Stock with small mouth bass to feed on crayfish.</p> <p>Chemical treatment</p> <p>Monitor chemical treatment options</p>

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
							Crayfish sterilization Monitoring of aquatic vegetation in Hay Lake
This is mentioned above There are no specific areas that are designated for wildlife viewing at Hay Lake.	AZGFD – There are wildlife viewing areas on the east side of . Three places are recommended for bird watching, 1) east side of Hay Lake, 2) Tremaine Lake, 3) Tremaine Lake Narrows.	Wildlife viewing sites	# of viewing sites	none	1-3 sites	There is a need to provide specific sites and access to places where wildlife can be viewed and enjoyed.	Create bird viewing site at East-side of Tremaine Lake with access from FR 82 via unclassified road 132. Need to re-locate and reconstruct unclassified road 132 for approximately 1.2 miles. Create 5 car parking area at birding site (terminus of unclassified road 132, but well away from pronghorn movement corridor to avoid disturbance to pronghorn). Specify unclassified road 132 as a system road, level 3. Construct approximately ½ to 1 mile trail from parking area to lake bed. Interpretation of watchable wildlife at trailhead.

Existing Condition	Desired Condition	Element	Measure	Existing Value	Desired Value	Need for Change	Potential Management Strategies
There is currently no specific management direction for the Hay Lake Complex, especially relative to the newly acquired Hay Lake property.	The Hay Lake Complex has specific management direction.	Land management planning	Completed assessment	none	Management assessment and management plan for Hay Lake Complex	There is a need to complete a management plan for the Hay Lake Complex.	Utilize CWG to create management direction. Utilize adjacent management direction from the current Forest Plan for like habitat types. Manage Hay Lake in a lakes complex including Tremaine Lake, Soldier Annex Lake, Soldier Lake, Long Lake, and Hay Lake. Management emphasis is for recreation, watershed condition and wildlife in concert with other uses.
Comments							